

Today's Air Tasking Process

by Lieutenant Colonel H. Alleyne Carter, USAF

In an effort to develop a more responsive air targeting architecture, several agencies have proposed significant changes to the theater air tasking process. These agencies often point to coordination problems (both real and perceived) that occurred during Operation Desert Storm as evidence that changes are needed in the air tasking system.

Those who advocate these changes generally have a valid point—the air tasking process used for most of the Gulf War would be hard pressed to provide the responsiveness and flexibility needed to efficiently synchronize and deconflict operations on today's battlefield. However, just as technology has greatly improved the capabilities and responsiveness of surface forces, similar developments also have enhanced the air tasking process. In fact, today's theater air control system (TACS) represents a quantum improvement over the system that existed during Desert Storm, thanks to the integration of computers and digitization.

This article describes the generic air tasking process and then shows how recent updates have made the process faster and more efficient. Some procedures and terminology may differ from theater to theater as each command tailors its operations for its requirements.

The Role of the Joint Air Operations Center (JAOC). As early as World War I, military leaders recognized that centralized control of theater air operations is the best way to apply limited air assets in support of a theater campaign. Today, *Joint Publication 3-56.1 Command and Control for Joint Air Operations* establishes the joint force air component commander (JFACC) as the single commander responsible for the theater air effort. The JFACC derives his authority from the joint force commander (JFC) who is designated by the theater commander-in-chief (CINC)—the JFC may be the CINC himself. Typically, the JFACC is designated the supporting commander for some missions (such as close air support, or CAS) and

the supported commander for others (such as counterair).

The JFACC's command center, the JAOC, exercises centralized control via the air tasking order (ATO). Essentially a daily operations order for theater air forces, the ATO tasks each air unit with missions commensurate with the unit's capabilities. Each ATO includes a tasking section containing many (possibly hundreds) of mission assignments similar to the two-line tasking depicted in Figure 1 on Page 6. (For simplicity, unit-specific remarks and coordinating instructions are not shown in the figure.)

Essential elements of the mission (number of aircraft, target, weapons and timing) are assigned by the JAOC; each unit plans and executes its missions in accordance with the ATO. The ATO normally covers 24 hours from 0600L on the day of execution until 0600L the next morning. This sunrise-to-sunrise time frame allows units more time to plan the complex, high-intensity night missions.

The ATO is the most important document issued by the JAOC; roughly half the JAOC is dedicated to building the ATO with the other half dedicated to orchestrating its execution. Figure 2 depicts the major elements of the JAOC. The Combat Plans Division assembles and distributes the ATO, along with the planning staffs in the intelligence sections and the liaison elements. Once the ATO is transmitted, the Combat Operations Division and its elements supervise its execution, including dealing with any deviations and making any necessary changes to the sortie flow.

Several organizations make up the JAOC, but almost all work with and support either Combat Plans, Combat Operations or both. The actual size of the JAOC may vary—the manning and rank structure is tailored to the specific contingency.

The ATO Process Today. To understand the ATO process, it's helpful to follow the development of a single ATO for Day X (referred to as ATO X). The typical ATO cycle includes several days of planning with the first significant decision point approximately 30 hours before execution. At that point, air planners in the JAOC have reviewed the JFC's guidance and theater air objectives.¹ The Guidance, Apportionment and Targeting (GAT) Branch of the Combat Plans Division has formulated and recommended to the JFACC a 24-hour air strategy of what the *air apportionment* should be for Day X.

The JFACC and other component commanders (or their representatives) normally review and adjust the apportionment recommendation. Other component commander may present their views of the JFACC's recommendation, but the JFC makes the final decision. This process allows the JFC to guide the air effort with the benefit of the expertise provided by the JFACC and his staff and input from the other components.

At any time, at least three ATOs are being worked by the JAOC staff: execution of today's ATO, assembly and distribution of tomorrow's ATO and the initial planning of the ATO for the day after tomorrow. Figure 3 depicts the timing of significant actions and information exchanges between agencies in the development of an ATO.

Air apportionment is usually expressed as a priority ("Air superiority is my first priority for friendly air forces during Phase I of the campaign") or by percentage ("30 percent of my air assets should be directed to the CAS mission against [a geographical area]").² Not later than 30 hours before executing the ATO, the JFC issues his daily guidance that includes the air apportionment decision and targeting priorities.

Another product that results from the GAT meeting is the joint integrated prioritized target list, or JIPTL. Daily GAT meetings provide a forum where intelligence and operations representatives of all service components present the priorities of their respective commanders

and submit requests for air support for the 24-hour period covered by ATO X. Those requirements and requests are then prioritized, based on the JFC's guidance.

The Army's liaison and representative at GAT meetings comes from the battlefield coordination detachment, or BCD. (BCD until recently was known as BCE or battlefield coordination element.) The Army forces (ARFOR) commander's staff provides a consolidated list of target nominations to the BCD each day before the meeting.

JFCs can employ the optional joint targeting coordination board (JTCB), which may produce the JIPTL. In this case, the GAT cell may perform weaponizing and assign air assets against the JTCB's list. Use of a JTCB allows component coordination similar to the GAT but may add a layer of command structure for air missions, requiring additional staff personnel and more processing time.

Following apportionment, the JFACC must *allocate* air assets in a manner that accurately reflects the JFC's guidance. Allocation refers to assigning sorties by aircraft type to each of the JFC's stated mission priorities in a way that optimizes aircraft usage and meets the JFC-approved apportionment.

Each air-capable component headquarters submits a daily sortie allocation and request message (ALLOREQ) to detail the sorties available for common-use JFACC tasking. Components use the

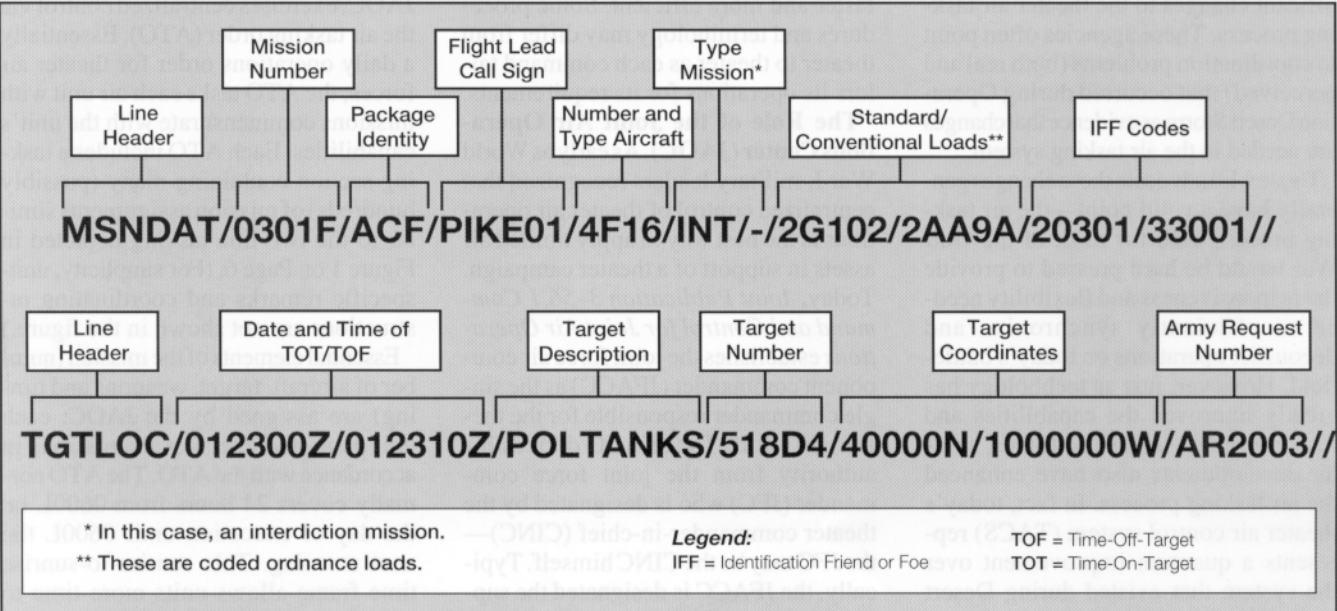


Figure 1: Typical ATO Mission Tasking

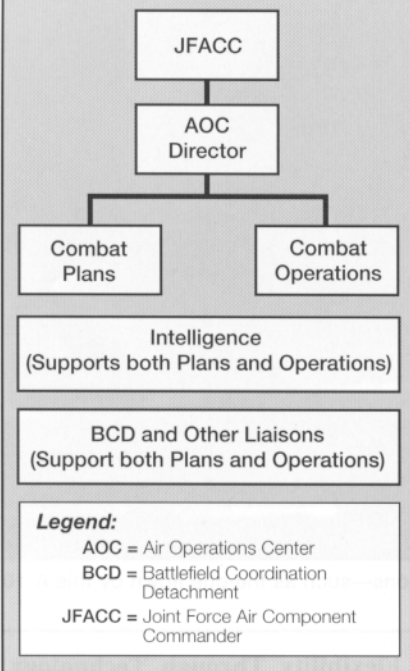


Figure 2: Key Organizations in the AOC

AIRSUPREQ message to request air support for missions that can't be filled with organic assets.

Based on the JFACC's allocation, the ATO Development Branch of the Combat Plans Division develops the master air attack plan (MAAP) for Day X by combining the JIPTL targets and the sortie allocation. When completed, the MAAP matches as many JIPTL targets as possible with appropriate combinations of aircraft and munitions. As such, the MAAP becomes the foundation for the air tasking section of the ATO, which is assembled by the ATO Production Branch of Combat Plans.³

After the allocation process, the JFLCC distributes the CAS sorties to his corps (or subordinate units) based on his priorities. This decision allows the JFLCC to direct the weight of the CAS effort where he wants it. Air Force F-16 and A-10 units, or Navy F/A-18 squadrons usually will be tasked to support CAS missions. Marine F/A-18s and AV-8s may be apportioned and allocated to CAS if the theater Marine air ground task force (MAGTF) commander makes them available for JFACC tasking.

At this point, enough information is available for tasked units to begin planning their missions, including tanker and other support missions (i.e., electronic combat, Wild Weasel, etc.). This information may be transmitted to the tasked air units in the form of an ATO "shell" or a SORTIEALOT message se-

veral hours before the ATO is executed. This provides air unit commanders and staffs, maintenance crews and aircrews as much advance notice as possible.⁴

Finally, the air tasking section of the ATO usually is combined with the airspace control order (ACO) listing the current airspace control measures—restricted operating zones and orbits for airborne warning and control system (AWACS), joint surveillance and target attack radar system (JSTARS), Compass Call, Rivet Joint, etc. The ATO also includes the special information section (SPINS) with the rules of engagement (ROE), communications plans, authenticators and other data that's pertinent.

After assembly, the complete ATO is proofed and transmitted, usually NLT 1800 the evening before Day X—approximately 12 hours before execution or the first time-on-target (TOT). The ATO is sent to each tasked unit, air liaisons officers (ALOs) at component headquarters, control and reporting centers (CRCs), air support operations centers (ASOCs) and other agencies.

Flexibility through Procedures. The lead time needed for this ATO process may seem excessive to commanders faced with a rapidly changing battlefield. However, the apportionment, allocation and distribution decisions can

be modified as needed to meet changing conditions.

For example, if intelligence reveals an unexpected but viable chemical threat, the JFC can redirect the air effort to meet this new priority. The JFLCC may redirect the weight of CAS to a different subordinate unit if developments dictate. Even if changes occur too late to be included in ATO X, they can rapidly be disseminated as a formal change to the ATO. The same flexibility applies to each step of the ATO process.

Combat Plans builds flexibility into each ATO during the planning phase. For example, due to the relatively long lead times for preplanned CAS requests (up to 48 hours) and the inherent difficulties in forecasting specific CAS requirements, it may not be possible to assign specific times and targets to all apportioned CAS sorties when the ATO is developed. CAS planners, however, can task these "untargeted" sorties in the ATO for ground or airborne alert missions with the aircraft ready to respond to requests for immediate CAS. A corps ASOC may launch the corps' sorties if the JAOC has delegated scramble authority to the ASOC.

Emerging threats, such as mobile missile launchers, can be targeted by establishing airborne alert orbits for aircraft configured to deal with the threat. Based

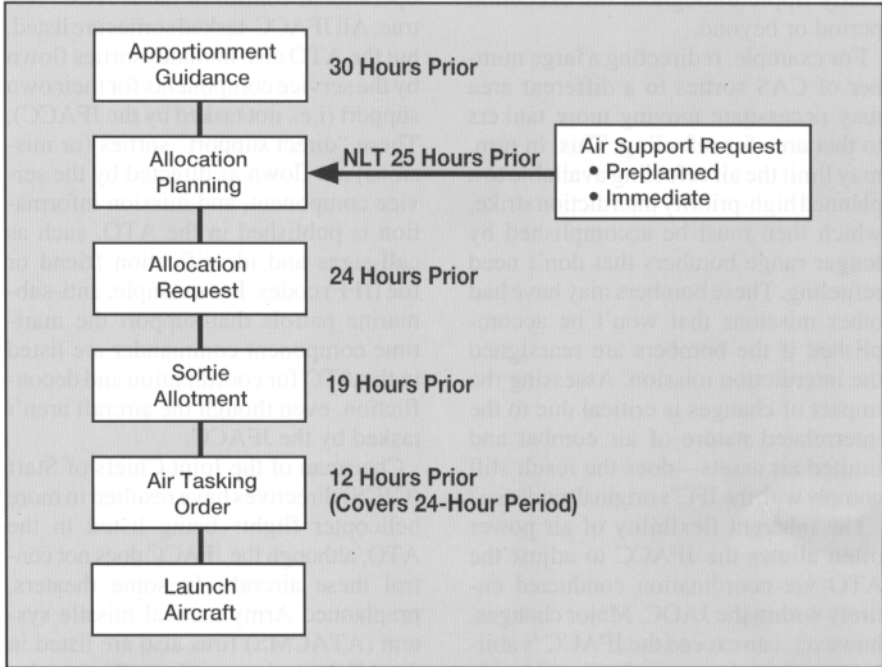


Figure 3: Significant Actions During ATO Development (Source: Joint Pub 3-56.24 Tactical Command and Control Planning Guidance and Procedures for Joint Operations: Joint Interface Operational Procedures and Message Text Formats, Page III-79)

on the intelligence estimates of the most probable areas for these targets to appear, aircraft may be assigned to patrol nearby orbits during specific times. As JSTARS, unmanned aerial vehicles (UAVs) or other sources acquire targets, the orbiting aircraft can be directed immediately onto the target.

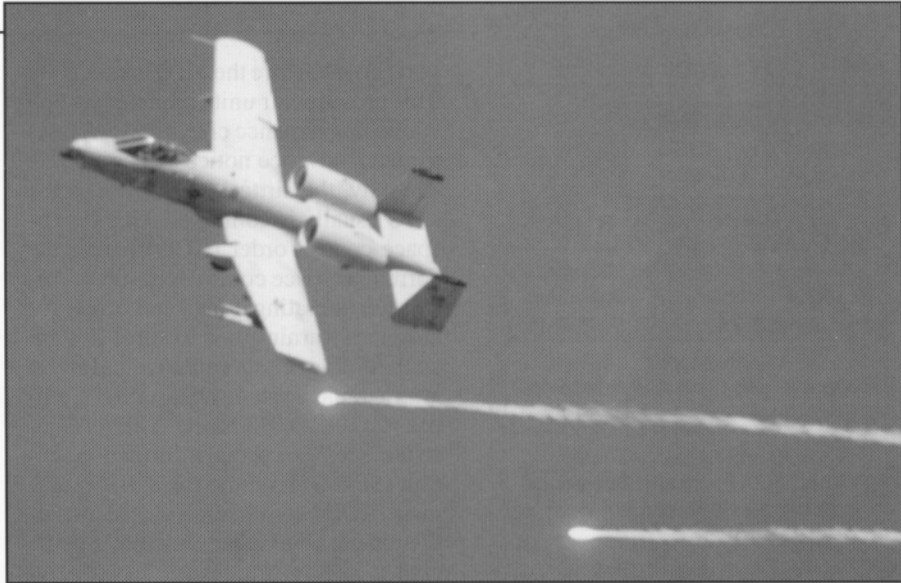
A major disadvantage of this practice is that limited strike assets are tied up for a mission that may be unproductive if no targets appear. However, if the JFC has established the threat system as a priority target, the JFACC can employ these procedures as an option. Sometimes orbiting strike aircraft can be assigned alternate targets after their station time has ended.

Once the ATO has been transmitted, responsibility for it transfers to the Combat Operations Division, which supervises the *execution* phase. Combat Operations coordinates and executes frequent changes to the ATO in response to a rapidly developing battle situation. Because the JAOC oversees all air operations in the theater, it must deal with changes occurring in the strategic environment as well as interdiction and the battlefield arenas.

Any adjustments to the planned flow of missions must be made carefully as each ATO is designed to maximize the use of limited resources. Changes can easily ripple throughout the execution period or beyond.

For example, redirecting a large number of CAS sorties to a different area may necessitate moving more tankers to that area for refueling. This, in turn, may limit the air refueling available to a planned high-priority interdiction strike, which then must be accomplished by longer range bombers that don't need refueling. These bombers may have had other missions that won't be accomplished if the bombers are reassigned the interdiction mission. Assessing the impact of changes is critical due to the interrelated nature of air combat and limited air assets—does the result still comply with the JFC's original guidance?

The inherent flexibility of air power often allows the JFACC to adjust the ATO via coordination conducted entirely within the JAOC. Major changes, however, can exceed the JFACC's ability to adjust the sortie flow within his internal organization. When this happens, external coordination is required, such as redistribution of CAS sorties by



The JFLCC directs the weight of his CAS missions—such as the one flown by this A-10 Warthog.

the JFLCC or modification to the apportionment by the JFC.

The JAOC serves as the single coordinating agency for all air activity in the theater. Various command and control elements of the theater air defense system and airspace management agencies rely on the ATO as a single-source, daily reference to coordinate and deconflict friendly air movements or actions across the theater.

A common misconception is that any sortie listed in the ATO is under the operational control of the JFACC. Not true. All JFACC-tasked sorties are listed, but the ATO also includes sorties flown by the service components for their own support (i.e., not tasked by the JFACC). These "direct support" sorties (or missions) are flown as directed by the service component, and mission information is published in the ATO, such as call-signs and identification friend or foe (IFF) codes. For example, anti-submarine patrols that support the maritime component commander are listed in the ATO for coordination and deconfliction, even though the aircraft aren't tasked by the JFACC.

Chairman of the Joint Chiefs of Staff (CJCS) directives have resulted in more helicopter flights being listed in the ATO, although the JFACC does not control these aircraft. In some theaters, preplanned Army tactical missile system (ATACMS) fires also are listed in the ATO for airspace deconfliction. Including these "direct support" missions means a more complicated ATO, but it potentially reduces chances of fratricide.

Flexibility Through Technology.

Fortunately, new tools introduced since the Gulf War have made the entire ATO process faster, easier and much more efficient. The combat air forces' primary command and control system, known as the contingency theater automated planning system (CTAPS), has greatly enhanced the JAOC's ability to deal with rapid changes in the ATO process.

The latest versions of CTAPS offer vast improvements over the earlier systems, and future developments will include interfaces with the Air Mobility Command's command and control information processing system (C²IPS), the Army's advanced Field Artillery tactical data system (AFATDS) and the global command and control system (GCCS).

CTAPS hardware consists of a theater-wide network of Unix-based computer workstations linked together with servers located in the JAOC and interconnected through secure data links. These links may be achieved through several means, including satellite communications or conventional land lines. CTAPS connectivity has been established through multiple media to link wing operations centers (WOCs) at deep inland locations with JAOCs afloat on command ships. CTAPS expedites distribution of the ATO and allows two-way communications between units and the JAOC. This gives the JAOC timely feedback on the status of missions, including takeoff times, aborts, combat losses and postmission estimated battle dam-

age assessment (BDA). An E-mail module plus a similar "talk" function allows all CTAPS users to exchange information over secure means. The greatest advantage of CTAPS, however, is that the ATO and subsequent changes can be quickly disseminated to all remote CTAPS locations using a common software and format.

Since Desert Storm, the increasing automation of the ATO process has been evident through constant updates in CTAPS software. CTAPS updates include the—

Advanced Planning System (APS). This module consists of an air battle planning system that interfaces with various preloaded data bases. Using APS, planners build the ATO mission directly on the computer instead of using hard-copy work sheets and manual data entries.

Today, APS missions can be automatically cross-checked for logistical feasibility, route analysis and mission support, such as air refueling, electronic combat (EC) support, etc. Thus, APS reduces the need for telephonic or face-to-face coordination. APS contains an interactive digital mapping capability with worldwide coverage.

Rapid Application of Air Power (RAAP). This module automates the analysis of targets and target sets. It interfaces with other data bases, including the joint munitions effectiveness module (JMEM) to match the weapons available with individual targets in the theater target list. This analysis is input to the GAT meeting and forms the basis for the MAAP. RAAP is used primarily by intelligence personnel in the JAOC when producing the JIPTL.

Airspace Deconfliction System (ADS). In addition to its primary function of allowing faster construction of the ACO, this module is used during ATO execution to rapidly establish or revise airspace control measures. This information can be rapidly disseminated via CTAPS.

Computer-Aided Force Management System (CAFMS). This operating system manages the data needed to build, transmit and execute the ATO. An early

version of CAFMS was the only module available during Desert Storm. This system allows mission data to be sorted in a variety of useful formats, such as by chronological list, by unit, etc.

Future CTAPS improvements include the—

Force-Level Execution (FLEX). FLEX will provide automated tools to import the entire battle plan from APS and execute the ATO. FLEX is projected for fielding FY 96 or 97.

TISD/JMI. The acronym stands for theater integrated situation display (TISD)/"J" for JTIDS (joint tactical information distribution system), "M" for MAOC (modular air operations center) and "I" for integration. This system will provide an integrated display of aircraft track data (the "air picture"), using tactical data information links (TADILs) that interface with some joint systems. Eventually, this module will be upgraded to interface with future joint systems.

Except for CAFMS, these advances have occurred since Desert Storm. The result is a more efficient, responsive and flexibility air tasking process, greatly improving the JAOC's ability to direct air support where it's needed.

New technologies across the US armed services have created new challenges. Cruise missiles, the multiple-launch rocket system (MLRS), UAVs, attack helicopters and ATACMS can range targets previously unreachable except by manned, fixed-wing aircraft. These systems enhance our warfighting potential, but coordinating and deconflicting their operations have become more complicated.

A promising combination of technology, procedures and doctrine may facilitate joint operations. Current joint efforts to develop an interface between AFATDS and CTAPS are expected to pay big dividends in coordinating and deconflicting fires. Several proposals are now under study to solve the problem of rapidly deconflicting fires on time-critical targets with air or special forces that may be in the area. Procedural solutions have also proven effective—for example, deconflicting cruise missile and UAV missions by listing

the missions in the ATO. This practice has worked well in recent joint exercises.

Tomorrow's ATO Process. The Air Combat Command is continuously improving the air tasking process. Development, testing and fielding new versions of CTAPS is a coordinated, ongoing effort. Future CTAPS versions will significantly improve today's capabilities. New modules are being designed to interface with existing modules and allow the system to operate more smoothly.

These improvements, when coupled with joint efforts—developing a common target numbering system and integrating digitized joint information links into the existing command and control architecture—will allow joint forces to achieve new levels of interoperability.

Continued technical progress may eventually shorten the cycle for ATO production, although the services will have to address operational problems before this can occur. With the command and control system interfaces now on the horizon, and the development of applicable joint doctrine and training, a seamless fire support architecture may be well on its way to reality.

Meanwhile, today's air tasking process delivers more responsive, flexible air support and delivers it with far greater efficiency than ever before.



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Notes:

1. Joint Publication 3-56.1 *Command and Control of Joint Air Operations* (14 November 1994), IV-6.
2. Ibid.
3. *JFACC Primer* (Washington, DC: Headquarter, US Air Force), 43.

4. Joint Publication 3-56.24 *Tactical Command and Control of Planning Guidance and Procedures for Joint Operations Joint Interface Operational Procedures Message Text Format* (October 1991), III-61.